Shaughness No: 090501

EAB Log-Out Date: 10/3/85 PACK # 11389

Init: _____

To: R. Taylor
Product Manager
Registration Division (TS-767)

From: Stuart Z. Cohen, Ph.D.
Exposure Assessment Branch
Hazard Evaluation Division (TS-769)

Attached, please find the environmental fate review of:

Reg./file No.: 524-316

Chemical: Alachlor

Type Product: Herbicide

Product Name: _____

Company Name: Monsanto

Submission Purpose: Ground Water Monitoring Protocol

Date In: 8/5/85

Action Code: 495

Date Completed: _____

EAB No.: ~~5828~~ 5826 ?

TAIS (Level II)	Days
_____	1

Deferrals to:

_____ Ecological Effects Branch

_____ Residue Chemistry Branch

_____ Toxicology Branch

(1)

10/3/85

Chemical: Alachlor
Shaughnessy No. 090501

ACTION: Ground-Water Monitoring
Protocol Review

Bert Litt and I have reviewed the protocol. I did not review the analytical chemistry section.

Similar to my 9/20/85 review of the 5/29/85 Monsanto letter, I have serious concerns about the study design. In a nutshell, Monsanto described a reasonable study design on pp. 2-9, but their execution plan on pp. 10-17 invalidates the study. Our impression is that Monsanto:

1) used a rational basis for setting up data domains or strata;

2) used a rational basis to determine the number of wells required overall in the two studies (corn/soybeans and peanuts);

3) failed to do a two or three stage study design as I suggested last winter (pick counties, pick intracounty segments, pick wells) in a statistically valid manner;

4) did not select the wells in a statistically valid manner;

5) did not do a worst case study.

At times it was difficult to understand the study design, but this is our impression of what was done (the first round of sampling is complete).

Well-screen depth is part of the design and therefore the data domains (sections X and XI). Certain areas of unspecified size were excluded from the target population if the soil properties were too heterogeneous (section XI(A)). The impact that this could have on the results was not examined. Considering the number of data domains, 18 in the corn/soybean study and 12 in the peanut study, the appropriate number of wells were calculated - 144 and 96, respectively. To the extent possible, equal numbers of wells were sampled for each data domain. Out of tens of thousands of wells in the target population of wells in two dozen counties, the wells to be sampled were identified in a nonstatistical manner which required geologic log information, etc., but involved no probabilistic selection criteria.

If the summary immediately above is true, then statements 1-5 above are true. These points should have been discussed before sampling began.

I have attached an unsolicited letter from the Fayette County, Iowa, government which expresses serious concern about the well survey in Fayette County. I called Mr. Jackson, and he assured me that alachlor was being used in the vulnerable environments in his county which Monsanto excluded from the sampling program.

Until these major points are resolved, it is not necessary to make more detailed comments. However, I note there is a statement in the guidance to samplers that filled q.c. bottles will be included in the sampling kits. If the solutions contain spiked alachlor solutions, they should be chilled even before the sampler picks up the kit.

Stuart Z. Cohen, Ph.D.
Ground-Water Team Leader
Exposure Assessment Branch

Attachment

cc: Bert Litt

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FAYETTE COUNTY SANITARIAN

P. O. Box 269
Courthouse
West Union, Iowa 52175
Phone 319-422-6061 Ext. 41

September 26, 1985

Dr. Stuart Cohen
Office of Pesticide Program
U.S. EPA
Washington, D.C. 20460

Dear Mr. Cohen:

I am writing in regard to a survey of drinking water supplies being done by Geraghty and Miller, consultants for the Monsanto Co. The purpose of the study is to prepare an environmental assessment of the herbicide Lasso.

I have been cooperating with this firm in their sampling of private wells in Fayette County. Their field representative has been very helpful and cooperative in the conduct of the first sampling which was completed in July.

However, I seriously question the objectivity of this study because of the method of selecting sample wells. Sandy areas of the county were carefully blocked out and avoided. Only those soil association areas with soils having moderate clay content and thick protective depths were included in the sampling area.

Perhaps 10-15% of this County has sandy soils where excessive leaching of herbicide could be expected. These are also the same areas where the majority of our shallow wells less than 100' in depth are located.

My intention is not to be negative about this study but I believe it to be heavily biased based upon the selection procedure of the sample wells. Lasso herbicide is a very widely used herbicide in this area and I am concerned that we obtain a true representation of our groundwater quality.

Sincerely,

Lyle F. Jackson
Fayette County Sanitarian

cc: Dr. Mathhew Lorber, EPA, Washington, D.C.
Fayette County Board of Supervisors

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